

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
22 January 2004 (22.01.2004)

PCT

(10) International Publication Number  
**WO 2004/008070 A3**

(51) International Patent Classification<sup>7</sup>: G01N 29/02 CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

(21) International Application Number: PCT/IL2003/000584 (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SI, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

(22) International Filing Date: 15 July 2003 (15.07.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
150748 16 July 2002 (16.07.2002) IL

(71) Applicant (for all designated States except US): BIOSCAN TECHNOLOGIES LTD. [IL/IL]; P.O Box 281, 20692 Yokneam (IL).

(72) Inventor; and

(75) Inventor/Applicant (for US only): COTER, Florin [IL/IL]; 9a Baul Shem Tov St , 33742 Haifa (IL)

(74) Agent: MILLER - SIERADZKI ADVOCATES & PATENT ATTORNEYS; PO Box 6145, 31061 Haifa (IL)

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,

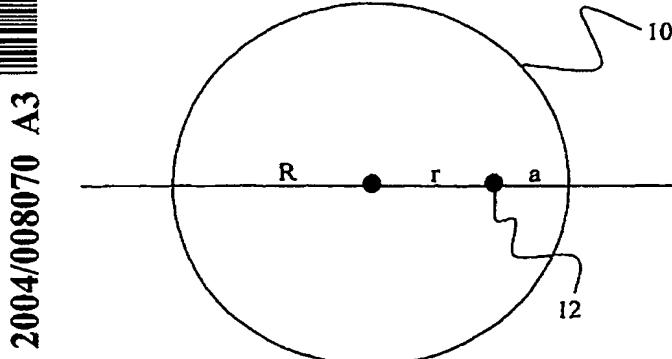
Published:

— with international search report  
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:  
13 May 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette

(54) Title: SYSTEM AND METHOD FOR DETERMINING PROPERTIES OF A TUBULAR CAVITY



$$\text{lumen} = (r_1 + r_2)v/4$$

(57) Abstract: A method for determining the distance of a transceiver located within a lumen from the center of the lumen and for determining the radius of the lumen, the lumen cross-section being substantially circular at the transceiver location, the method applied on data received from a transceiver placed at a position within the lumen that is distance ( $r$ ) from the center and distance ( $a$ ) from the lumen wall, transmitting a signal of known velocity ( $v$ ) that can be correlated with the time of flight and receiving a first signal and a second signal that are reflections of the transmitted signal, timing the time differences between the transmission of the transmitted signal and reception of the first ( $t_1$ ) and second ( $t_2$ ) reflection signals, the method comprising: Calculating the distance of the transceiver from the center of the lumen =  $(t_1 - t_2)v/4$ ; and Calculating the radius of the

WO 2004/008070 A3

BEST AVAILABLE COPY